

# COASTAL CONSERVANCY

Staff Recommendation

May 19, 2011

## CALIFORNIA OCEAN STEWARDS MARINE EDUCATION PROJECT

Project No. 11-018-01

Project Manager: Rachel Couch

**RECOMMENDED ACTION:** Consideration and possible Conservancy authorization to disburse \$60,000 to O'Neill Sea Odyssey for implementation of a new marine education project serving underserved elementary school children in the Monterey Bay region.

**LOCATION:** Monterey Bay Region

**PROGRAM CATEGORY:** Coastal Education

---

### **EXHIBITS**

Exhibit 1: [Project Location and Site Map](#)

Exhibit 2: [Photos](#)

Exhibit 3: [Project Letters](#)

---

### **RESOLUTION AND FINDINGS:**

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Section 31119 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes disbursement of an amount not to exceed \$60,000 (sixty-thousand dollars) to O'Neill Sea Odyssey to implement a marine education project for underserved elementary school children in the Monterey Bay region. Prior to the disbursement of funds, the Executive Officer of the Conservancy shall review and approve in writing a work program, budget and schedule for the project and any contractors proposed to be engaged for the project.”

Staff further recommends that the Conservancy adopt the following findings:

“Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed project is consistent with the current Project Selection Criteria and Guidelines.
2. The proposed authorization is consistent with the purposes and objectives of Chapter 3 (Section 31119) of Division 21 of the Public Resources Code, regarding awarding grants to

non-profit organizations for environmental education related to the preservation, protection, enhancement and maintenance of coastal resources.”

---

## PROJECT SUMMARY:

This authorization would disburse \$60,000 to O’Neill Sea Odyssey (OSO) for California Ocean Stewards (COS), a hands-on marine education project for underserved 4<sup>th</sup> through 6<sup>th</sup> grade elementary school children in the Monterey Bay and South San Francisco Bay region. The project is aligned with OSO’s core marine education curriculum and includes classroom and onshore education center instruction, a sailing field trip in Monterey Bay and a community service component. Curriculum compact disks will be distributed to participating teachers and made available to interested teachers throughout California. An evaluation tool will be used to gauge the curriculum’s success in raising ocean literacy among students. Conservancy funding is recommended for a program-year to field test the newly completed curriculum.

The proposed project supports the Conservancy’s strategic objective to enhance coastal resources through development of environmental stewardship, and also provides access to the shore to individuals who otherwise have limited opportunity to visit and learn about littoral and ocean environments. At the California and World Ocean Conferences in 2003 and 2007, papers were presented highlighting the need to create ocean stewards and advocates among youth who represent California’s future. A 2003 study prepared for the legislature entitled *The Effects of Outdoor Education Programs for Children in California* found that low-income children who attended outdoor education had science scores 27% higher than those who did not. The study results demonstrate that outdoor education can enhance academic achievement.

The COS program serves 4<sup>th</sup> through 6<sup>th</sup> grade school classes and has four phases: classroom introduction to COS curriculum, website and activities; community service project; sailing field trip; post-field follow up with “Expand Your Knowledge” web-based activities. The proposed project includes field testing a new curriculum promoting ocean literacy, directly serving 900 youth who are low to moderate income and ethnic minority youth and 30 teachers. Students undertake three-hour lessons in navigation, sailing, conservation, and marine science aboard a 65-foot catamaran in Monterey Bay along with follow-up projects at the education center. There is no charge to students, although each school group must complete a community service project in order to participate.

Students are taught using a three station format both on and offshore that focuses on navigation, marine ecology and marine biology. Navigation concepts are taught and compass datasheets are used to record landmark bearings and weather readings. These are later charted on a plot of Monterey Bay helping students learn about navigation tools, and weather as it affects navigation. Students are taught about the Monterey Bay Sanctuary’s kelp forest, marine mammals, human influence on our marine habitat and related ecosystems, threats to the bay, and ideas for conservation and preservation. A water sample is taken and tested for pH, and the effect of pH on the ecosystem is discussed. On the way back to the harbor, students count the number of otters in Black’s Beach kelp forest and record this information on their data sheet. Using a watershed model, examples of point source and non-point source pollution are demonstrated. Students are given a comprehensive view of how watersheds work, and how onshore activities

impact the ocean. Finally, students discuss the life cycle of plankton, their role in the food web and the unique chemical/physical balance that helps maintain life in the sea. Students participate in a plankton tow and the specimen is taken to the education center for further examination. A water sample is also taken back to test its salinity. After students have completed all three stations they are asked to conceptualize solutions to current environmental problems including landfill diversion, organic farming, reducing, reusing, recycling and alternate forms of transportation and energy. At the end of the course students participate in a question and answer session with the OSO instructors who stress the importance of a well-rounded knowledge of marine biology, marine ecology and navigation.

The community service projects are conducted by each participating class, and approved by OSO's education coordinator. A few recent examples of projects include: the incubation of steelhead eggs to be released into the San Lorenzo River; wetland cleanup and restoration with Watsonville Wetlands Watch; removal of garbage from an urbanized area of Soquel Creek; and sand dune restoration near Seaside.

OSO is dedicated to making marine science available to student populations that would normally have little opportunity for outdoor education. Most youth served are from schools with a majority of students who qualify for the free or reduced-cost lunch program and are low to moderate income. During the 2009 - 2010 school year 74% of the students OSO served were ethnic minorities, and 52% were English learners. A 2007 independent analysis of OSO's program by Applied Survey Research found that both lower and higher income youth significantly increased their environmental knowledge as a result of the program. Lower income youth "caught up" with higher income youth in the area of environmental knowledge. OSO written science materials are printed in English and Spanish. Scientific terms have proven to serve as an excellent method for language "scaffolding" or linking and building upon both languages through their common elements.

The project will use curriculum which was developed in 2008 that adheres to the Ocean Literacy Essential Principal and Fundamental Concepts and is also aligned with National Education Science Standards. The final product is a curriculum CD similar to a widely distributed handbook produced by a partnership between OSO and the Monterey Bay National Marine Sanctuary (MBNMS) in 2003. OSO will also promote its curriculum online; ocean literate supplemental curriculum will be implemented by OSO and MBNMS staff, relying on their proven track records individually, and the demonstrated effectiveness of their partnership. The new curriculum includes a matrix indicating alignment with education standards in life science, physical science, mathematics and literacy.

O'Neill Sea Odyssey is a successful nonprofit organization founded in 1996 and incorporated in 1997, operating a widely respected marine conservation and science education project. Its marine education center is fully open to the public and serves school groups throughout the year. As of April 2011, OSO has served over 60,000 youths. OSO's mission statement reads that the organization's purpose is to "provide a hands-on educational experience to encourage the protection and preservation of our living sea and communities." The education center projects are funded by grants, individual and business donations, local governments, and foundations, as well as by rental revenues from the upstairs portion of the building. This collaborative philosophy combined with a science-based expertise of the organization contributes to the popularity of OSO's marine education programs.

**Site Description:** OSO education programs take place on a 65-foot Catamaran in Monterey Bay and in the OSO Marine Education Center, located in the O’Neill Sea Odyssey building at the southern end of the East Harbor within the City of Santa Cruz. The Center is open to the public and is fully accessible to visitors with disabilities. OSO’s project targets underserved youth from the Monterey Bay and inland Central Coast areas, serving over 180 school classrooms a year.

**Project History:** In 2003, the Conservancy approved a grant of \$250,000 to O’Neill Sea Odyssey to construct an elevator in the O’Neill Sea Odyssey building to enable disabled access to its marine education center, and to fund costs associated with the kindergarten through 12th grade education project of the marine education center during construction. This project will support OSO’s continued pioneering efforts to bring marine education of the highest academic quality to children who might otherwise never have the opportunity to learn about the ocean and coastal environment.

### PROJECT FINANCING

Coastal Conservancy	\$60,000.00
O’Neill Sea Odyssey	\$15,000.00
Freida Fox Foundation	<u>\$10,000.00</u>
<b>Total Project Costs</b>	<b>\$85,000.00</b>

The anticipated source of Conservancy funds is the fiscal year 08/09 appropriation from the California Beach and Coastal Enhancement Account, California Environmental License Plate Fund, which may be used for any project consistent with Division 21 of the Public Resources Code (Vehicle Code Section 5067(c)(1)(B)). As discussed below, the project is consistent with Chapter 3 of Division 21 as it facilitates environmental education for elementary school children related to protection and preservation of coastal resources.

In-kind boat costs of \$42,000 will be provided by Team O’Neill.

### CONSISTENCY WITH CONSERVANCY’S ENABLING LEGISLATION:

The California Ocean Stewards project is undertaken pursuant to Chapter 3 of the Conservancy’s enabling legislation, Public Resources Code Section 31119 (regarding K-12<sup>th</sup> grade education projects).

Section 31119(a)(1) enables the Conservancy to undertake educational projects for pupils in kindergarten to grade 12, inclusive, relating to the preservation, protection, enhancement and maintenance of coastal resources, and may award grants to nonprofit organizations, educational institutions, and public agencies for those purposes. In accordance with Section 31119(a)(2)(A) the proposed project will enhance and implement the environmental education program’s focus on marine resource conservation and will allow for increased participation by underserved populations at O’Neill Sea Odyssey. Consistent with Section 31119(a)(2)(B) the OSO curriculum meets the State Board of Education adopted content standards. Consistent with Section 31119(a)(2)(D), OSO does not charge school groups for participation in the program. Consistent with Section 31119(a)(2)(E)(i), OSO will prepare a final project report that documents increased pupil participation in its programs. Consistent with Section

31119(a)(2)(E)(ii), OSO does outreach for its programs to low-income, underserved and non-coastal areas.

**CONSISTENCY WITH CONSERVANCY'S 2007  
STRATEGIC PLAN GOAL(S) & OBJECTIVE(S):**

Consistent with **Goal 3 Objective C** of the Conservancy's current Strategic Plan, the proposed project will result in the implementation of public events emphasizing coastal, watershed, and ocean resource education, maritime history, and climate change impacts. Also consistent with this objective, the project will provide access for disadvantaged communities to a marine education center.

**CONSISTENCY WITH CONSERVANCY'S  
PROJECT SELECTION CRITERIA & GUIDELINES:**

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines, last updated on June 4, 2009, in the following respects:

**Required Criteria**

1. **Promotion of the Conservancy's statutory programs and purposes:** See the "Consistency with Conservancy's Enabling Legislation" section above.
2. **Consistency with purposes of the funding source:** See the "Project Financing" section above.
3. **Support of the public:** The project enjoys strong public support from The City of Santa Cruz, State Senator Simitian, Assemblymembers Bill Monning and Luis Alejo, as well as the Monterey Bay National Marine Sanctuary, and non-profit organizations Watsonville Wetlands Watch and Save Our Shores.
4. **Location:** The proposed project would be located within the coastal zone of Santa Cruz and Monterey Counties.
5. **Need:** Without Conservancy funds this unique educational opportunity to field test the OLEP an FC curriculum will not be implemented in the near future, given the fundraising challenges that non-profit organizations are experiencing due to the economic downturn.
6. **Greater-than-local interest:** This project will serve populations within the greater Monterey Bay region and extending into San Francisco Bay and inland central coast areas. This project will also serve as a model for other California communities in developing ocean literacy and coastal stewardship programs.
7. **Sea level rise vulnerability:** This educational project will not affect or be affected by sea level rise since the project will be completed by end of 2012 no significant change in sea levels are expected in the short term.

**Additional Criteria**

8. **Urgency:** The project will address the urgent need to engage youth in both ethnically and economically underserved communities in activities to increase awareness of environmental issues they will face in the future as California's next generation.
9. **Leverage:** See the "Project Financing" section above.
10. **Innovation:** The project focuses on encouraging ocean literacy for economically underserved youth of ethnic minority populations through use of a curriculum that is designed to help teachers meet academic standards.
11. **Readiness:** The project can begin as soon as funding is approved.
12. **Realization of prior Conservancy goals:** "See "Project History" above."
13. **Cooperation:** The project will involve cooperation with schools to coordinate program elements with teachers; non-profit groups including Watsonville Wetlands Watch and Save Our Shores to provide student community service opportunities; and, the Monterey Bay National Marine Sanctuary to provide guidance on program effectiveness.
14. **Minimization of greenhouse gas emissions:** The project will necessitate approximately 76 one-way bus trips among the two projects for an average of 50 miles each. At 20 mpg using diesel fuel, 190 gallons of fuel will be burned. The Team O'Neill catamaran uses a negligible amount of gasoline (10 gallons for 30 boat trips) to motor out of the Harbor. Therefore, the total fossil fuel use is estimated to be 200 gallons. This will be mitigated by 30 community service projects undertaken: native plantings, erosion control, and marine debris reduction, storm drain stenciling and recycling projects. California Ocean Stewards' carbon footprint will also be mitigated by the recent installation of solar panels at OSO's education center, which will save 3,700 kilowatt hours of grid-obtained electricity per year.

**COMPLIANCE WITH CEQA:**

The California Ocean Stewards marine education activities does not have a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment and, therefore, is not considered "a project" under the California Environmental Quality Act (CEQA) (14 Cal. Code of Regulations §15378). Activities that do not constitute a project are not subject to CEQA.